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978-0-521-84918-0 - Australia's Mammal Extinctions: A 50000 Year History
Chris Johnson
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Australia's great mammal extinction debate rages on. Close to half the mammal extinctions across the planet over the last two hundred years have been of Australian species. The eighteen species lost include several beautiful wallabies and, of course, the thylacine.

The loss of these species is just the latest stage in a long decline that began in the last ice age. Huge wombats, possibly the largest-ever burrowing creatures, were once common, and there were marsupial 'lions' and a bird three times larger than the emu. Having debated the matter for a century and a half, experts still disagree on what caused the extinction of Australia's mammal megafauna.

Why did the thylacine and Tasmanian devil disappear from the mainland within the last few thousand years, why did the thylacine finally go extinct in Tasmania last century, and why have so many mammals been lost from inland Australia in the last two hundred years? These questions are hotly debated – and dingoes, fire, disease, sheep, rabbits, cats and foxes have all been blamed.

Chris Johnson reviews 50 000 years of Australia's environmental history in search of what really caused these waves of extinction. He has sifted and evaluated a multitude of studies across disciplines ranging from archaeology to ecology. His persuasively reasoned conclusion is that despite the great scale and complexity of the extinctions, a single process was responsible for them all.

Australia's Mammal Extinctions brings the great mammal extinction debate to readers with no specialist knowledge of the many fields it covers. The splendid illustrations capture the poignancy of what we have lost, and the clearly argued, beautifully written text challenges us to use our knowledge to conserve those mammals that survive.

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Australia's Mammal Extinctions

A 50000 year history

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PREFACE

AUSTRALIANS ARE OFTEN told that for the last two hundred years their country has had the world's worst record of mammal extinctions. Unfortunately this is true. What is less well known is that the recent disappearances of species like the desert rat-kangaroo, pig-footed bandicoot and white-footed tree-rat are part of a very long process of decline of the continent's mammal fauna that began about 50 000 years ago. Understanding the cause (or causes) of this long decline is a profoundly important problem. It is at the centre of some of Australia's most vexed environmental debates, such as whether ancient Aboriginal people hunted giant mammals to extinction, and how those first people changed Australian ecosystems by their use of fire. We also need to understand what caused the more recent declines, because as well as resulting in many extinctions they left in their wake a large collection of rare and threatened mammals. Much conservation effort in Australia is devoted to saving mammal species on the brink of extinction. If we want to succeed in this, we need to understand what pushed them to the brink in the first place.

There has been a lot written about mammal extinction and conservation in Australia, but this literature is widely scattered. The debate over prehistoric extinctions has mostly been conducted in the pages of journals of archaeology and palaeontology, although it has occasionally broken out into popular books and the mass media. People who study recent extinctions and the management of threatened mammal species usually publish their work in journals of ecology or conservation, or in specialised scientific volumes. There is a lot of this and it is of high quality, but very little of it refers to the prehistoric antecedents of the recent declines and extinctions. In fact, with the exception of Tim Flannery's *The Future Eaters*, the ancient and recent extinctions of Australian mammals have been treated as completely separate and independent problems.

My aim in this book is to bring these fields of prehistoric and historic mammal extinctions together, and to ask if they fit within a common framework of explanation. In other words, I want to find out if they are part of the same story, and to recount the events of that story in their proper order and relationship to one another. At its core, this effort is based on a thorough investigation of all the primary evidence. I have delved deeply into the literature on Australian palaeontology, archaeology, climate and vegetation change, and contemporary ecology, and that information is used to produce a complete history of Australian mammals focusing on that critical period of the last 50 000 years.

I hope *Australia's Mammal Extinctions* will make sense as a history of Australia: it is the history of Australia as registered in changes to the continent's mammal fauna. As well as putting together this historical narrative, I use the primary evidence to test competing hypotheses on what caused so many mammals to go extinct. And at the end of the book I suggest a version of events that links all of the extinctions together.

The book covers some quite technical ground, but I have tried to write it in a way that will be easily understood by readers who have no specialist knowledge in any of the disciplines mentioned above. I have avoided technical language as far as possible, and for those jargon terms that survived and might cause difficulties there are brief explanations in a short glossary.

Writing this book has been a big job, but I have been helped by many people. In particular I want to thank, for their generosity in reading and commenting on various chapter drafts, David Bowman, Barry Brook, Richard Gillespie, Peter Jarman, Paul Martin, Robyn Montgomery and Stephen Wroe; I am especially grateful to Peter who read about half the manuscript and to Barry and Robyn who read the whole thing. The book was improved a great deal through discussions with all of these people, and also with Ian Abbott, Chris Dickman, Will Edwards, Judith Field, Bill Foley, Richard Fullagar, Betsy Jackes, Menna Jones, the late Jill Landsberg, Peter Latz, Jon Luly, Ben Moore, Anne Musser, Des Nelson, Bob Paddle, Matt Pye, Gavin Prideaux, Andy Purvis, Bert Roberts, Grahame Walsh, Michelle Waycott and Rod Wells.

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to write a book like this, but he also provided some of his stunningly beautiful drawings of extinct species, while another extraordinary palaeontologist/artist, Anne Musser, contributed some of her equally beautiful paintings. Thanks to you both, and to Ashley Field for his miniatures of living marsupials. Some original and very special photographs were provided by Michael Cermak, George Chaloupka, Ken Johnson, Jen Martin, Euan Ritchie and Karl Vernes.

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